Homework 5

Introduction to Data Visualization

1. Load `house_prices.rda` in R and perform the followings:
   (a) Use `facet_wrap` to draw line plots to represent the trend for `house_price_index` over years for each state. . Please have three ticks on the x axis which are for years 1980, 2000, and 2020. Since you have limited space your labels can be '80, '00, and '20 for these ticks.
   (b) Use `gather()` function from `tidyr` to reshape your data in a way that it will have measure and value columns for `house_price_index` and `unemploy_perc`, respectively, in two columns. You should leave out remaining attributes by using "-" in front them inside the function. Then, direct the output to a new data frame called `house_reshaped` Please refer to examples we did in class.
   (c) Use `house_reshaped` to replicate the graph in 1a with two lines where each represents `house_price_index` and `unemploy_perc` over the years for each state. Once you have the chart, please comment on it as to whether it's a good graph to present those two pieces of information.
   (d) When you achieve the goals above, please create a R markdown file and create an HTML page which has your codes and charts including your comments.
2. Load `house_prices.rda` in R, perform the following operation, and explain how it changes the original data set. Then, create facet_wrap plot which can visualize your values for each state and colorize the lines based on the measurement, i.e., unemploy_perc and house_perc. Please consider using `scale_x_continuous(breaks = ymd(c("1980-01-01", "2000-01-01", "2020-01-01")), labels = c("80", "00", "20"))` to have a few breaks on your x-axis for a more clear view. Don't forget to include `library(lubridate)` in your script.

```
house_prices%>%gather(key=measure, value=value, -c(house_price_index, date, state))->house_reshaped
```

3. Please see the Python notebook **here** and make a copy to yourself. Then follow the instructions in the notebook to perform your visualization. Please submit your notebook as a response to this question.